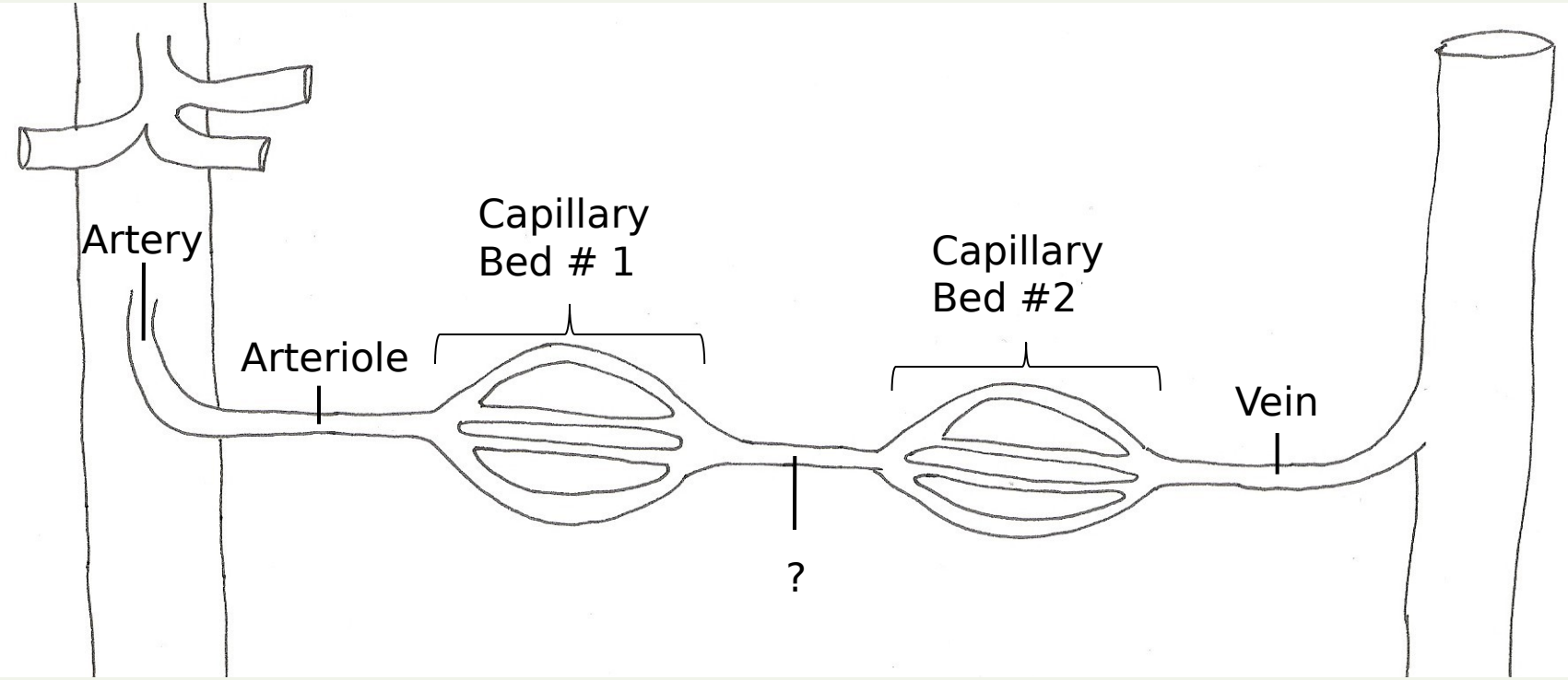
A Portal System in the Cardiovascular System

A vascular arrangement linking 2 capillary beds in series from one organ to another by connecting vessels (often veins). It involves two distinct sets of capillaries before returning to the heart.

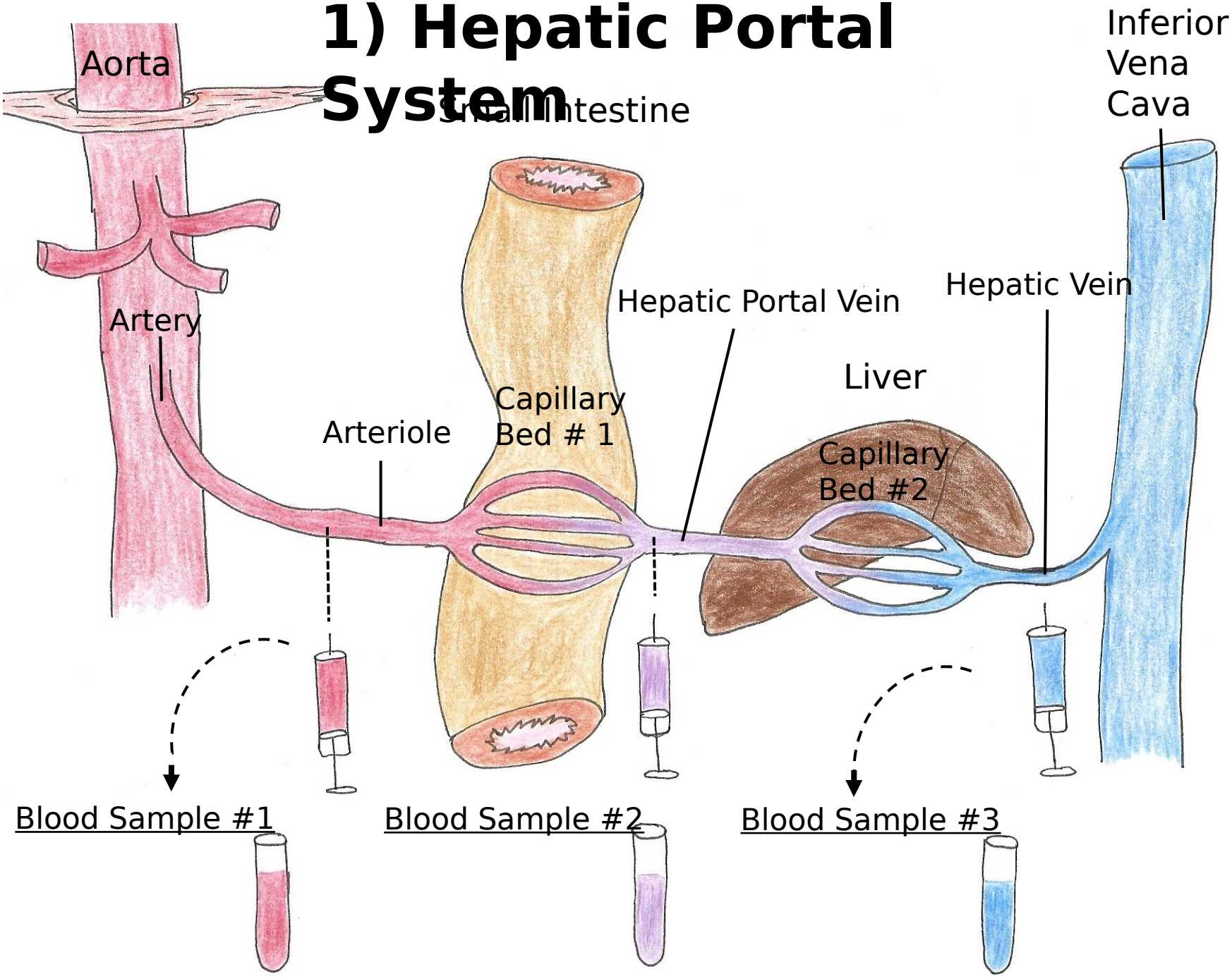


There are three (3) examples of Portal Systems in the Body:

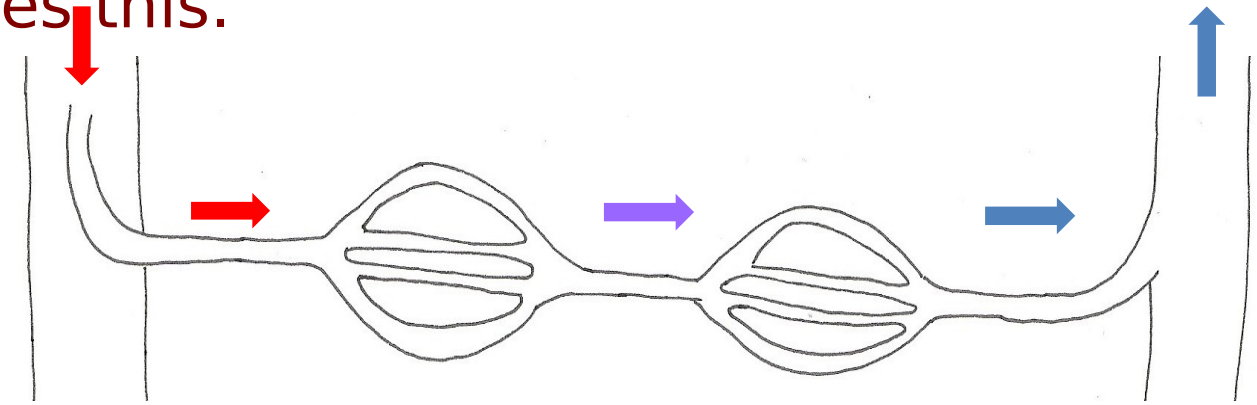
1) Hepatic Portal System
2) Renal (Nephron)

3) Hypothalamic - Hypophyseal

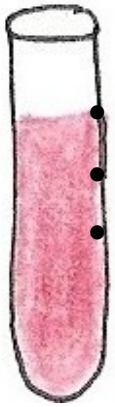
1) Hepatic Portal System



The **purpose** of the Hepatic Portal system is to stabilize the systemic blood. The results of the blood sample below explain how this vascular arrangement achieves this.



Blood Sample #1



- O_2 Rich
- Nutrients Mod/Low
- Toxins Low

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Blood Sample #2

- O_2 Low
- Nutrients High
- Toxins High

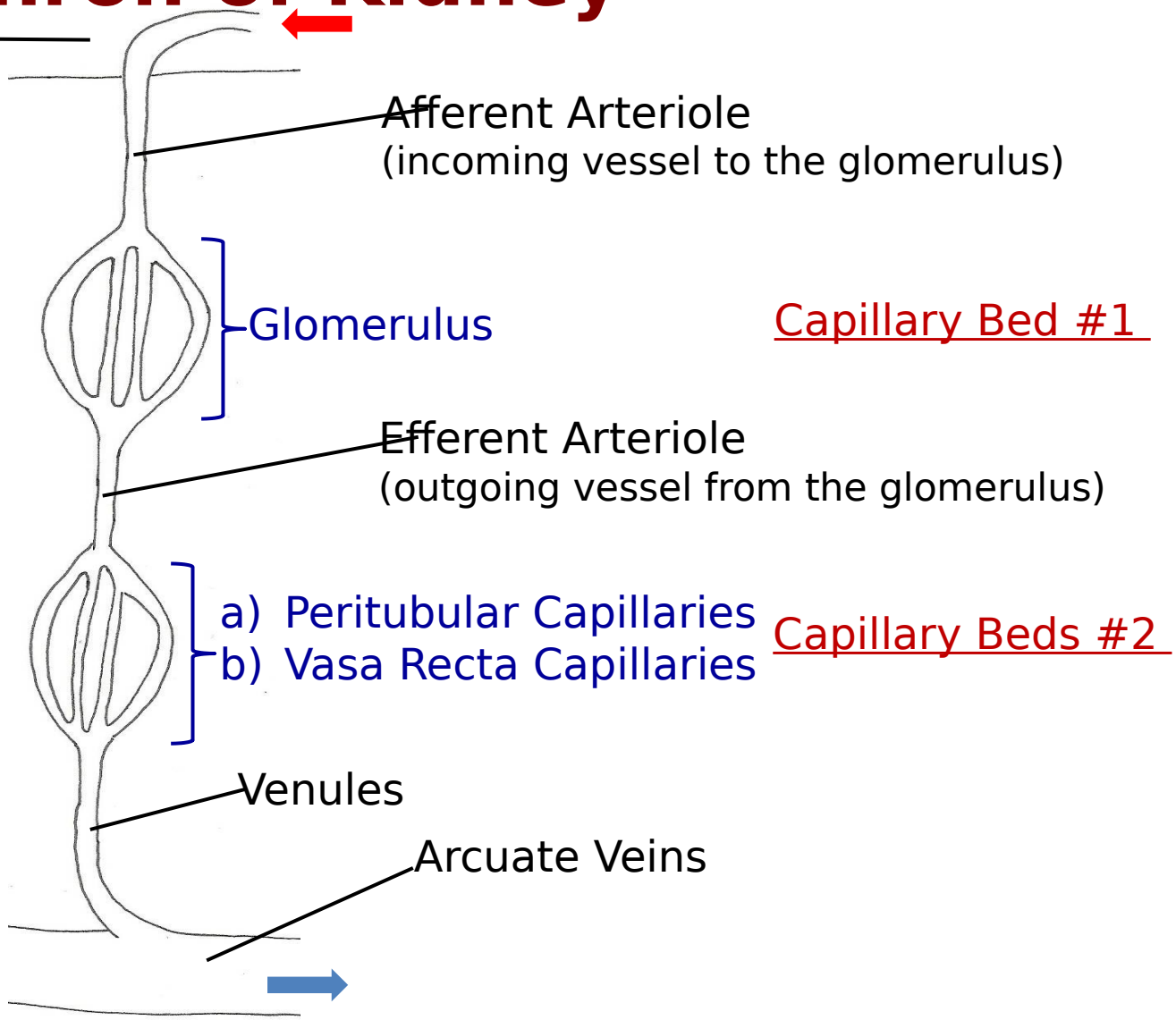
Hepatic Portal Vein

Blood Sample #3

- O_2 Poor
- Nutrients Moderate
- Toxins Low

Hepatic Vein

2) Renal Portal System: In the Nephron of Kidney



3) Hypothalamic – Hypophyseal

Between the Hypothalamus and the Anterior Pituitary gland

Superior Hypothalamic Artery
(Anterior Pituitary)

Inferior Hypothalamic Artery
(Posterior Pituitary)

Primary Capillary Plexus

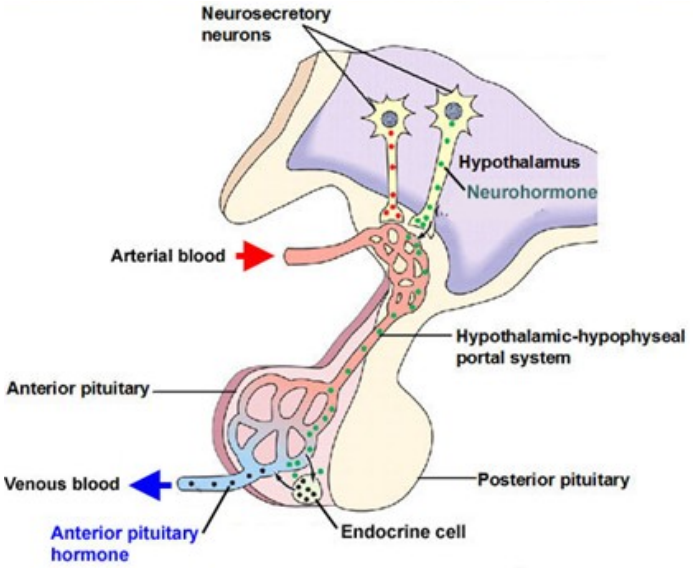
Capillary Bed #1

Hypophyseal Portal Vein(s)
(Hypothalamic – Hypophyseal portal system)

Secondary Capillary Plexus

Capillary Bed #2

Hypophyseal Vein(s)



- Releasing/Inhibiting Hormones
- Anterior Pituitary Hormones